CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

ORDER NO. 92-135
NPDES NO. CA0029874

WASTE DISCHARGE REQUIREMENTS FOR:

FORMER CATERPILLAR FACILITY
800 DAVIS STREET
SAN LEANDRO, ALAMEDA COUNTY

The California Regional Water Quality Control Board, San Francisco Bay Region (hereinafter called the Board) finds that:

1. Caterpillar, Inc., hereinafter called the discharger, by application dated August 3, 1992, has applied for issuance of waste discharge requirements under the National Pollutant Discharge Elimination System (NPDES).

2. The discharger operated a heavy manufacturing and assembly plant at 800 Davis Street in the City of San Leandro, Alameda County (Figure 1, attached to this Order), located approximately 3/4 mile northeast of the intersection of Highway 880 and Davis Street. The discharger's operation was terminated in 1984. In late 1986 the discharger made preliminary arrangements to sell a 7 acre parcel bordered by Davis, Alvarado, Antario and Martinez Streets. After a preliminary investigation, two areas were found to be polluted with petroleum hydrocarbons and low levels of volatile organic compounds.

3. The Department of Toxic Substances Control (DTSC) is the lead agency for this site. DTSC is continuing to oversee this site investigation and cleanup activities under cooperative agreement with the discharger. The Board has not considered nor adopted a Cleanup and Abatement Order under Water Code Section 13304 for this discharge.

4. Subsurface investigations initiated in September and October 1986 detected organic solvents in both soils and the shallow groundwater zone at the facility. The principal contaminants are trichloroethylene (TCE), tetrachloroethylene (PCE), 1,1,1-trichloroethane (TCA), 1,1-dichloroethane (1,1-DCA), and 1,1-

dichloroethylene (1,1-DCE). Trichlorofluoromethane (Freon-11), and 1,1,2, trichloro-1,2,2,- trifluoroethene (Freon-113) were also detected.

5. In 1987 a groundwater investigation was implemented to evaluate the local stratigraphy and the distribution of chemicals in the shallow aquifer zone. It was determined that the TCE in the groundwater had migrated approximately 5000 feet west of the former Caterpillar facility in a broad elongated plume. Dissolved concentrations of 1,1-DCA and 1,1-DCE occur in a less extensive plume within the TCE plume. The PCE plume extends westward beyond the TCE plume.

6. In 1988, approximately 16,000 cubic yards of contaminated soil were excavated from the two source areas, treated and landfilled.

7. In February 1992, the discharger submitted a draft Remedial Investigation /Feasibility Study, evaluating remedial alternatives for the shallow impacted groundwater. An Interim Remedial Action Plan for the shallow groundwater was submitted in May 1992 and accepted by Board staff. This plan called for extraction, treatment and disposal of the shallow ground water pollution plume. This Order applies to several anticipated discharge points for extracted and treated groundwater to be implemented in phases by the discharger. This first phase of extraction and treatment will be at 210 Dabner Street, approximately 400 feet west of the former Caterpillar facility.

8. The groundwater treated at 210 Dabner Street will be discharged into a nearby storm sewer drain on Lucille Street. This pipe leads to a sewer juncture at the intersection of Lucille and Minerva Streets. From this point the water will flow west along Lucille Street, turning to the north along Preda Street, then west again on Minerva Street, north on Reva Avenue, west at the extension of Phoenix Way, and then north along Douglas Street where it will discharge into San Leandro Creek, which flows into San Francisco Bay.

9. Based upon the criteria in Board Resolution No. 88-160 and on information submitted by the discharger, the Board finds that treated extracted groundwater reclamation, re-use, or discharge to POTW from the 210 Dabner Street site is not feasible. The current tenant of the property indicated they could not use the reclaimed water as either process water or irrigation water. The City of San Leandro Sanitation District does not accept groundwater discharges for volumes of water that would be discharged from this site. Therefore, no viable option for re-use appears available to the discharger. However, limited reuse of treated groundwater from additional phase treatment systems does appear to be an option.

10. Available data indicate that concentrations of metals in treated groundwater

often exceed the shallow water effluent limitations contained in the Board's Basin Plan. In many cases, the presence of metals in groundwater is due to natural factors related to soil and water chemistry, rather than from a discharge of waste. The need to minimize the potential for aquatic toxicity due to elevated levels of metals must be balanced against the total mass loading from these discharges and the cost of treatment (See: Provision D.1.a.).

11. The Basin Plan contains water quality objectives for San Leandro Creek and Lower San Francisco Bay.

12. The existing and potential beneficial uses of San Leandro Creek and Lower San Francisco Bay include:

- Fresh water recharge
- Warm fresh water habitat
- Contact and non-contact water recreation
- Wildlife habitat
- Preservation of rare and endangered species
- Estuarine habitat
- Fish spawning and migration
- Industrial service supply
- Shellfishing
- Navigation
- Ocean commercial and sport fishing

13. The Basin Plan prohibits discharge of "all conservative toxic and deleterious substances, above those levels which can be achieved by a program acceptable to the Board, to waters of the Basin." The discharger's ground water extraction and treatment systems and associated operation, maintenance, and monitoring plans constitute an acceptable control program for minimizing the discharge of toxicants to waters of the State.

14. Effluent limitations of this Order are based on the Clean Water Act, Basin Plan, State and U.S. Environmental Protection Agency (EPA) plans and policies, and best engineering and geologic judgement. EPA Region IX draft guidance "NPDES Permit Limitations for Discharge of Contaminated Groundwater: Guidance Document" was also considered in the determination of effluent limits.

15. The issuance of waste discharge requirements for this discharge is exempt from the provisions of Chapter 3 (commencing with Section 21100) of Division 13 of the Public Resources Code (CEQA) pursuant to Section 13389 of the California Water Code.

16. The Board has notified the discharger and interested agencies and persons of its intent to issue waste discharge requirements for the discharge and has provided them with the opportunity for a public hearing and an opportunity to submit their written views and recommendations.

IT IS HEREBY ORDERED that the discharger, its agents, successors, and assigns in order to meet the provisions contained in Division 7 of the California Water Code and regulations adopted thereunder, and the provisions of the Clean Water Act and regulations and guidelines adopted thereunder, shall comply with the following:

A. EFFLUENT LIMITATIONS

1. The effluent, at the discharge point to the storm drain, shall not contain constituents in excess of the limits contained in Table 1:

Table 1

Constituent	Instantaneous Maximum (µg/l)
a. VOCs	
trichloroethylene (TCE)	5.0
tetrachloroethylene (PCE)	5.0
1,1,1-trichloroethane (TCA)	5.0
1,1-dichloroethane (1,1,-DCA)	5.0
1,1-dichloroethylene (1,1-DCE)	5.0
cis + trans-1,2-dichloroethylene	5.0
1,2-dichloroethane (1,2-DCA)	5.0
Trichloroflouromethane (Freon-11)	5.0
1,1,2-trichloro-1,2,2-triflouroethane (Freon 113)	5.0
chloroethene (vinyl chloride)	0.5
Any other volatile organic compound (as identified by EPA Method 601 or 624)	5.0
b. Inorganics	
arsenic	5.0
cadmium	1.1
chromium (VI)	11.0
copper	11.8

cyanide	5.2
lead	3.2
nickel	160.0
selenium	5.0
silver	4.0
zinc	110.0

2. The flow of the discharge shall be limited to the treated groundwaters removed from the uppermost shallow aquifer.

3. The pH of the discharge shall not exceed 8.5 nor be less than 6.5.

4. In any representative set of samples, the discharges shall meet the following limit of quality:

   Toxicity: The survival of test fishes in 96-hour static bioassays of the undiluted effluent as discharged shall be a three sample moving median of 90% survival, and a 90 percentile value of not less than 70% survival in a single sample. The bioassays shall be performed according to protocols approved by the U.S. EPA or the State Water Resources Control Board or published by the American Society for Testing and Materials or American Public Health Association. Two fish species will be tested concurrently. These shall be the most sensitive two species determined from a single concurrent screening of three using two of the following three test fish species in parallel tests. The test fish shall be rainbow trout, fathead minnow, or three-spine stickleback.

   The compliance monitoring may be carried out with one, most sensitive fish species if both of the following conditions are met:

   - the discharger can document that the acute toxicity limitation, as described above, has not been exceeded during the previous three years, or that acute toxicity has been observed in only one of two fish species, **and**

   - a single screening using all three fish species confirms the documented pattern.

B. RECEIVING WATER LIMITATIONS

1. The discharge of wastes shall not cause the following conditions to exist in waters of the State at any place:

a. floating, suspended, or deposited macroscopic particulate matter or foam;

b. bottom deposits or aquatic growths;

c. alteration of temperature or apparent color beyond present natural background levels;

d. visible, floating, suspended, or deposited oil or other products of petroleum origin;

e. toxic or other deleterious substances to be present in concentrations or quantities which will cause deleterious effects on aquatic biota, wildlife, or waterfowl, or which render any of these unfit for human consumption either at levels created in the receiving waters or as a result of biological concentrations.

2. The discharge of waste shall not cause the following limits to be exceeded in waters of the State in any place within one foot of the water surface:

a. pH: The pH shall not be depressed below 6.5 nor raised above 8.5, nor caused to vary from normal ambient pH levels by more than 0.5 units.

b. Dissolved oxygen: 5.0 mg/l minimum. The median dissolved oxygen concentration for any three consecutive months shall not be less than 80% of the dissolved oxygen content at saturation. When natural factors cause lesser concentration(s) than specified above, the discharge shall not cause further reduction in the concentration of dissolved oxygen.

c. Un-ionized ammonia (as N):

0.025 mg/l annual mean
0.4 mg/l maximum

3. This discharge shall not cause a violation of any applicable water quality standard for receiving waters adopted by the Board or the State Water Resources Control Board as required by the Federal Water Pollution Control Act and regulations adopted thereunder. If more stringent applicable water quality standards are promulgated or approved pursuant to Section 303 of the Federal Water Pollution Control Act or amendments thereto, the Board will revise and modify this Order in

accordance with such more stringent standards.

C. WATER RE-USE LIMITATIONS

1. A limited water re-use plan must be approved by the Executive Officer.

2. All water shall meet all effluent limitations in effect.

3. A report must be sent on a quarterly basis indicating the number of gallons used and locations used.

D. PROVISIONS

1. The discharger shall comply with all sections of this order immediately upon adoption by the Board and upon starting any discharge, except as modified by the time schedule and tasks listed below.

   a. BACKGROUND METAL CONCENTRATION TREATABILITY DETERMINATION FOR MERCURY

      COMPLETION DATE: 60 DAYS FOLLOWING ADOPTION OF THIS ORDER

      Submit a technical report acceptable to the Executive Officer containing a technical and cost analysis of increased treatment to reduce mass loading of mercury from extracted groundwater. The report shall include an assessment of 1) potential effectiveness, 2) technical feasibility, and 3) projected costs of treatment.

2. The discharger shall comply with the self-monitoring program as adopted by the Board and as may be amended by the Executive Officer.

3. The discharger shall notify the Board if any activity has occurred or will occur which would result in the discharge, on a frequent or routine basis, of any toxic pollutant which is not limited by this Order.

4. Any discharge to a location other than the discharge point(s) specified in this Order will require a modification to this Order.

5. The discharger shall send as-built drawings of the remediation system(s).

6. The discharger shall comply with all items of the attached "Standard Provisions, Reporting Requirements and Definitions" dated December

1986 and modified January 1987, except items A.10, B.2, B.3, C.8 and C.11.

7. This Order expires November 18, 1997. The discharger must file a report of waste discharge in accordance with Title 23, Division 3, Chapter 9 of the California Code of Regulations no later than 180 days in advance of such expiration date as application for issuance of new waste discharge requirements.

8. This Order shall serve as a National Pollutant Discharge Elimination System Permit pursuant to Section 402 of the Clean Water Act or amendments thereto, and shall become effective 10 days after date of its adoption provided the Regional Administrator, Environmental Protection Agency, has no objection. If the Regional Administrator objects to its issuance, the permit shall not become effective until such objection is withdrawn.

I, Steven R. Ritchie, Executive Officer, do hereby certify that the foregoing is a full, true and correct copy of an Order adopted by the California Regional Water Quality Control Board, San Francisco Bay Region, on November 18, 1992.

STEVEN R. RITCHIE
Executive Officer

Attachments: Figure 1 - Location Map
Self-Monitoring Program

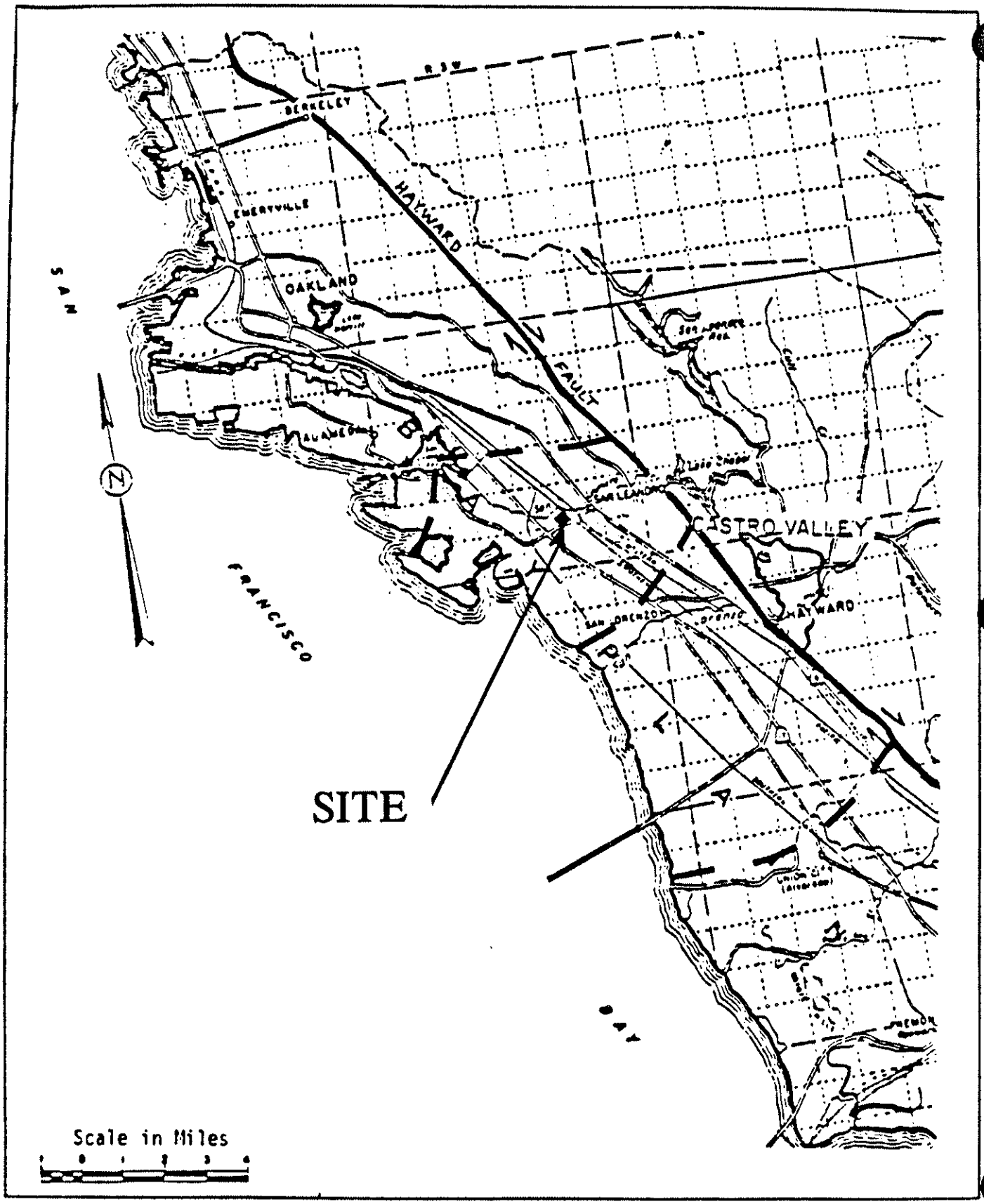

FIGURE 1: LOCATION MAP

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

SELF-MONITORING PROGRAM

FOR:

CATERPILLAR, INC.
800 DAVIS STREET
SAN LEANDRO, ALAMEDA COUNTY

NPDES NO. CA0029874

ORDER NO. 92-135

CONSISTS OF:

PART A Dated December 1986 and modified January 1987

PART B ADOPTED NOVEMBER 18, 1992

PART B

CATERPILLAR, INC.
800 DAVIS STREET
SAN LEANDRO, ALAMEDA COUNTY

I. DESCRIPTION OF SAMPLING STATIONS

A map with locations of treatment and discharge shall be included in each Self Monitoring Plan report

A. INFLUENT

Station	Description
I-1...I-n	At any point(s) in the ground water collection system(s) immediately prior to treatment at any treatment location(s).

B. EFFLUENT

Station	Description
E-2...E-n	At any point(s) following treatment at any treatment location(s).

C. RECEIVING WATERS

Station	Description
C-1...C-n	At any point(s) in San Leandro Creek at least 100 feet but no more than 200 feet downstream from the storm drain discharge point(s) of E-1 through E-n into San Leandro Creek.
C-2...C-n	At any point(s) in San Leandro Creek at least 100 feet but no more than 200 feet upstream from the storm drain discharge point(s) of E-1 through E-n into San Leandro Creek.

II. SCHEDULE OF SAMPLING AND ANALYSIS

The schedule of sampling and analysis is provided in the attached Table A.

III. MODIFICATIONS TO PART A, DATED DECEMBER 1986 AND MODIFIED JANUARY 1987

All items of Self-Monitoring Program Part A, dated December 1986 and as modified January 1987 shall be complied with except for the following:

A. Additions to Part A: Section G.4.d.5: "Results from each required analysis and observation shall be submitted as laboratory originated data summary sheets in the quarterly self-monitoring reports. All chromatographic peaks for purgeable halocarbons and/or volatile organics shall be identified and quantified for all effluent samples. If previously unquantified peaks are identified in any effluent sample, then these peaks shall be confirmed based on analyses using chemical standards necessary to achieve proper identification and quantification. Results shall also be submitted for any additional analyses performed by the discharger at the specific request of the Board for parameters for which effluent limits have been established and provided to the discharger by the Board."

B. Deletions from Part A: Sections D.2.b., D.2.g., D.3.b., E.1.e.1, E.1.f., E.2.b., E.3., E.4., E.5., F.2.b., G.2., G.4.b., and G.4.f.

C. Modifications to Part A: For the following, the discharger shall comply with the Sections as changed and reported herein:

1. Section D.1. is changed to read:

"Samples of influent shall be collected according to the schedule in Part B and shall not include any plant recirculation or other sidestream wastes. Deviation from this must be approved by the Executive Officer."

2. Section D.2.a. is changed to read:

"Samples of effluent and receiving waters shall be collected at times coincident with influent sampling unless otherwise stipulated. The Regional Board or Executive Officer may approve an alternative sampling plan if it is demonstrated that expected operating conditions warrant a deviation from the standard sampling plan."

3. Section D.2.d. is changed to read:

"If two consecutive samples of any one constituent or parameter

monitored on a weekly or monthly basis in a 30-day period exceed the effluent limit or are otherwise out of compliance, or if the required sampling frequency is once per month or less (quarterly, annually or other) and the sample or parameter exceeds the limit or is otherwise out of compliance, the discharger shall implement procedure(s) acceptable to or approved by the Board's Executive Officer, on a case by case basis."

4. Section D.2.e. is changed to read:

   "If any instantaneous maximum limit is exceeded, within 24 hours of receiving the analytical results indicating the violation, a confirmation sample shall be taken and analyzed with 24 hour turn-around time. If the instantaneous maximum is violated in the second sample, the discharge shall notify Regional Board staff immediately. The Executive Officer may order the discharge to be terminated, on a case-by-case basis."

5. In Section F.1., the phrase "(at the waste treatment plant)" is changed to read, "(to Regional Board or U.S. Environmental Protection Agency staff for inspection)."

6. Section F.2.a. is changed to read:

   "Record flows from totalizing meters every two weeks and calculate average daily flow for each month."

7. Section F.2.b. is changed to read:

   "Establish flows per minute and estimate flow in gallons per day."

8. Quarterly written reports required in Section G.4 shall be filed quarterly by the thirtieth day of the following month.

9. Section G.4.e is changed to read:

   "Summary tabulations of the data shall include, for each constituent, total number of analyses, maximum, minimum, and average values for each period. Total flow data shall also be included. This information shall be prepared in a format similar to EPA Form 3320-1. This information shall be submitted only to the Board:

Executive Officer
California Regional Water Quality Control Board
2101 Webster Street, Suite 500
Oakland, CA 94612

10. The Annual Report required in Section G.5. shall be submitted by January 30 of each year in place of the quarterly report due on the same day.

IV. MISCELLANEOUS REPORTING

If any chemicals or additives are proposed to be used in the operation and/or maintenance of the ground water extraction/treatment system, the discharger shall obtain the Executive Officer's concurrence prior to use. The details concerning such approved use shall be reported in the next periodic report submitted to the Board.

I, Steven R. Ritchie, Executive Officer, hereby certify that the foregoing Self-Monitoring Program:

1. Has been developed in accordance with the procedure set forth in this Board's Resolution No. 73-16 in order to obtain data and document compliance with waste discharge requirements established in Regional Board Order No. 92-135.

2. Was adopted by the Board on November 18, 1992.

3. May be reviewed at any time subsequent to the effective date upon written notice from the Executive Officer or request from the discharger, and revisions will be ordered by the Executive Officer or the Board.

STEVEN R. RITCHIE
Executive Officer

Attachments: Table A
Figure 1 - Location Map
Figure 2 - Site Map

TABLE A
SCHEDULE FOR SAMPLING, MEASUREMENTS, AND ANALYSIS

Sampling Station	I-1,I-2, ...I-n	E-1, E-2, ...E-n	C-1,C-2, ...C-n
TYPE OF SAMPLE	G	G	G
Flow Rate (mgd)	cont	cont	-
Bioassay 96-hr % survival (flow-through or static)	-	Y	-
Ammonia Nitrogen (mg/l & kg/day)	-	V	-
Turbidity (NTU's)	Q	Q	-
pH (units)	M/Q	M/Q	Q
Dissolved Oxygen (mg/l and % saturation)	-	Q	Q
Temperature (°C)	M/Q	M/Q	Q
Standard Observations	-	-	Q
Arsenic (mg/l)	-	Y	-
Cadmium (mg/l)	-	Y	-
Chromium (hexavalent) (mg/l)	-	Y	-
Copper (mg/l)	-	Y	-
Cyanide (mg/l)	-	Y	-
Lead (mg/l)	-	Y	-
Mercury (mg/l)	-	Y	-
Nickel (mg/l)	-	Y	-
Selenium (mg/l)	-	Y	-
Silver (mg/l)	-	Y	-
Zinc (mg/l)	-	Y	-
EPA Method 601 with Freon 113	M/Q	M/Q	Y
EPA 624*	Y	Y	Y

CATERPILLAR, INC.
800 DAVIS STREET
SAN LEANDRO
SELF-MONITORING PROGRAM

LEGEND FOR TABLE A

TYPES OF SAMPLES

G = grab sample
C-24 = 24 hr. composite
Cont. = continuous sampling
DI = depth integrated sample
BS = bottom sediment sample
O = observation
- = none required

TYPES OF STATIONS

I = intake or influent stations
E = effluent sampling stations
D = discharge point sampling stations
C = receiving water sample stations
L = basin and/or pond levee stations
B = bottom sediment station
G = groundwater station

FREQUENCY OF SAMPLING

H = once each hour
D = once each day
W = once each week
M = once each month

Y = once each year

V = varies; total ammonia nitrogen shall be analyzed and unionized ammonia calculated whenever fish bioassay test results fail to meet the specified percent survival

2/W = 2 days per week
5/W = 5 days per week
2/M = 2 days per month
2/y = once in March and once in September
Q = quarterly, once in March, June, September, and December

W/M = weekly for first three months after startup of operations and reduced to monthly thereafter

W/Y = weekly for first three months after startup of operations and reduced to annually thereafter

M/Y = monthly for first six months after startup of operations and reduced to annually thereafter

2D = every 2 days
2W = every 2 weeks
3M = every 3 months
Cont = continuous

Q/Y = quarterly for first year after permit reissuance, reduced to annually thereafter

W/Q = weekly for first three months after startup of operations and reduced to quarterly thereafter

M/Q = monthly for first three months after permit re-issuance and reduced to quarterly thereafter

* When water samples are tested by EPA Method 624, it is not necessary to test the samples by EPA Methods 601 and 602.

CATERPILLAR, INC.
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SAN LEANDRO
SELF-MONITORING PROGRAM

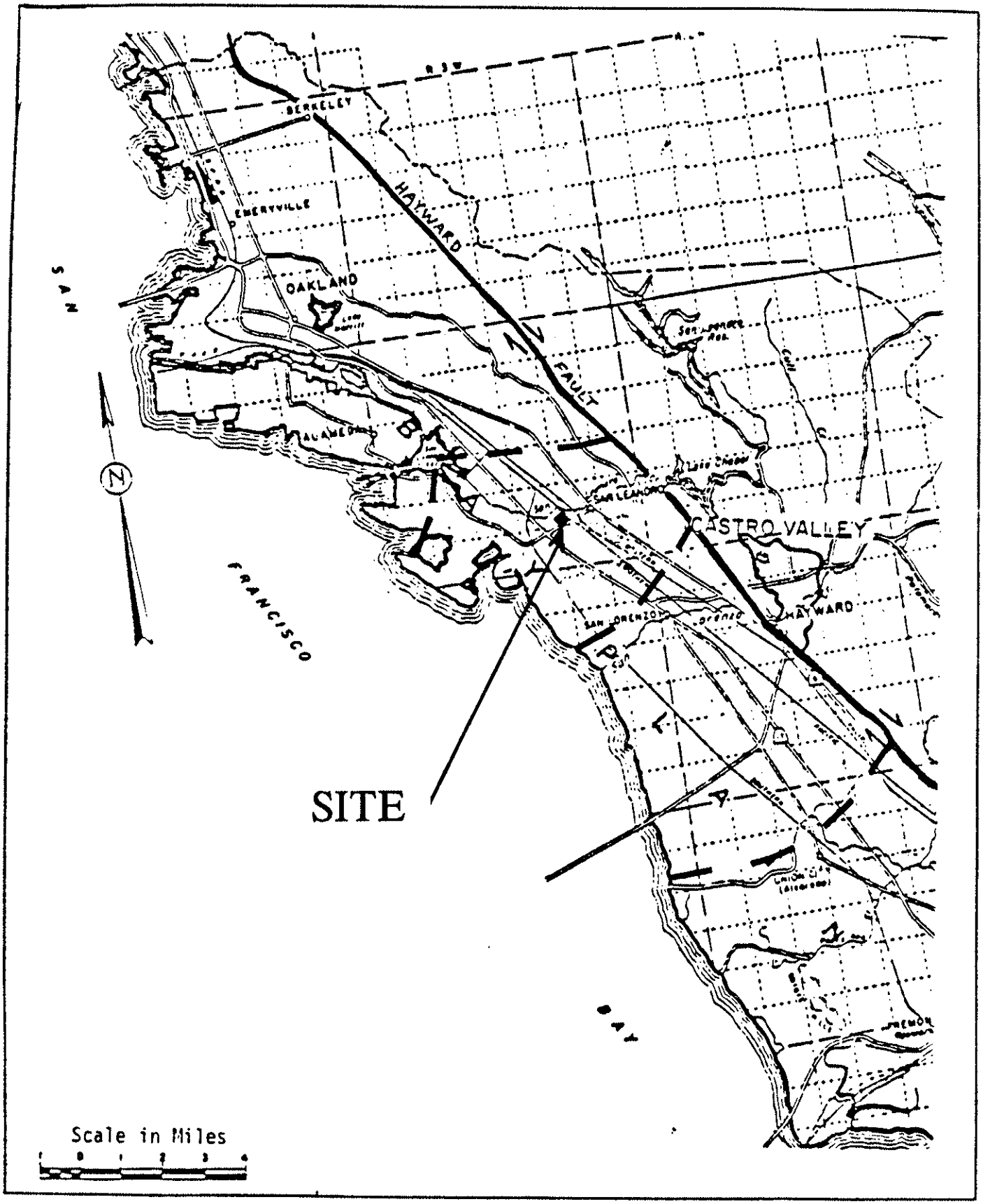

FIGURE 1: LOCATION MAP

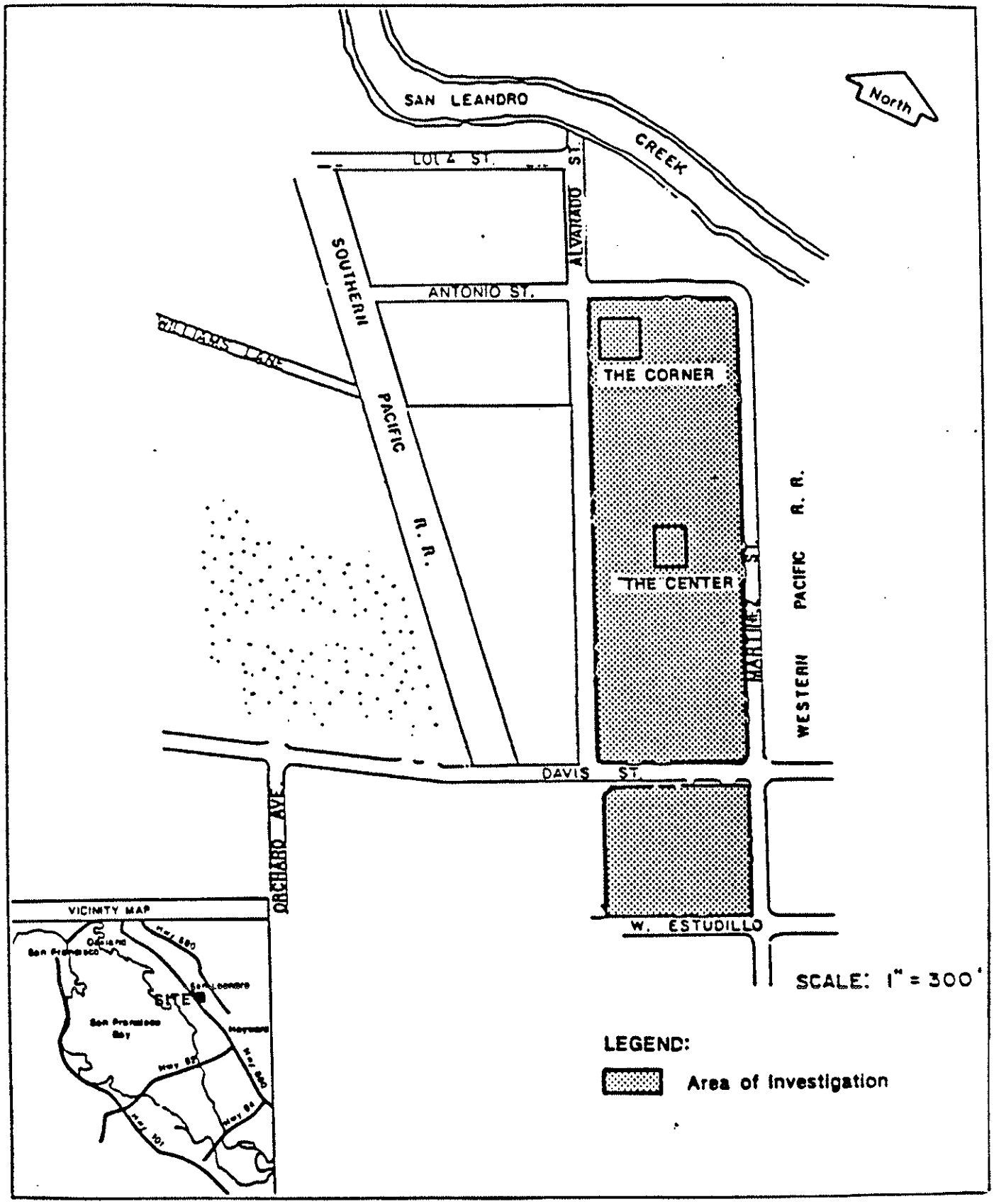

Figure 2: SITE MAP